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SECTION III – CURRENT ENVIRONMENT

A. INTRODUCTION

This section presents an overview of the current business and technical environments. This view of current operations and technology provides an "as is" context, from which the future direction and proposed solution requirements for the Corporate Online Member Employer Transactions (COMET) - Pension System Resumption (PSR) Project (PSR Project) can be better understood.

It is organized into three subsections Section III.B Business Problem Statement; Section III.C Current Business Environment; and Section III.D Current Technical Environment.

It is expected that the Qualified Business Partner (QBP) will want to review additional supporting information related to the current business and technical environment. For this reason, a wide variety of reference materials have been made available in the PSR Reference Library. It is the QBP's responsibility to review the library information, as may be needed, to better understand business and technical complexity. Library reference materials include the following:

- Requirements database housing supporting details;

- Data dictionary documentation defining individual data elements and data associations;

- Documentation of process inputs and outputs (e.g., reports and correspondence);

- Business process "as is" documentation; and,

- Technical related "as is" documentation.

B. BUSINESS PROBLEM STATEMENT

The California Public Employees' Retirement System (CalPERS) utilizes a large number of work units, specialized business processes, and computing resources to meet the needs of its customers. These organizational components have evolved over time to create a highly complex set of capabilities. While these capabilities meet business demands, they do so in an inefficient manner that requires a significant investment of time and resources. The reality is that weaknesses in 'how' business is conducted today undermine CalPERS capacity to meet future business demands and objectives.

Process Challenges – A number of key process challenges have been identified that pose risk to CalPERS achieving its future business goals and include:

- Methods for interacting with customers are limited and inefficient resulting in customer dissatisfaction and increased workloads.

- Significant personnel resources are devoted to low-value activities including data validation, rework, and reconciliation. Staff often acts as interface between systems.

- Processes are often manual/paper intensive, hampering customer responsiveness.

- Information is difficult to access and of uncertain quality – undermining staff and customer confidence.

- Temporary workarounds too often persist as de-facto procedure, further exacerbating inefficiencies.

Technical Challenges – Underlying these process challenges are some key technical challenges including:

- Computing resources are inflexible in adapting to changing business requirements.

- Environments are poorly integrated, highly complex, and costly to manage. There are issues of language incompatibility and end-of-life/support concerns.

- Data redundancy and errors result in time-consuming and costly validations by staff.

- Data is poorly integrated and difficult to administer/report and requires synchronization via many "Backbridges".

- Temporary Year 2000 (Y2k) fixes expire in 2009.

CalPERS recognizes that the "status quo" is not an option; applying current practices to future business needs will significantly stress resources and impart an unacceptable risk of diminished service quality and efficiency. CalPERS is responding to these challenges by initiating fundamental changes to business practices and technology. The vision for change is centered on the principal that any improvement must be driven by the needs of the business.

The PSR Project is a vital part of this transition. It is expected that the PSR Project will help the organization to not only survive but to thrive in the future business environment.

C.   CURRENT BUSINESS ENVIRONMENT

CalPERS has three primary "lines of business" – Pension Benefits, Health Benefits, and Investments. For each of these, CalPERS operates within a defined marketplace with a defined set of customers or clients. The scope of the PSR Project is limited to the Pension Benefits and Health Benefits business lines.

1.   CalPERS Programs

Within the Pension and Health lines of business, CalPERS provides a variety of retirement and health benefit programs and services, and administers other programs dedicated to protecting the financial security of participants. The programs that pertain to the PSR Project include the following:

- The Public Employees' Retirement System (PERS) - PERS was established in 1931 to provide a defined-benefit retirement program for employees of state agencies, public agencies, and public schools.

- The Judges' Retirement System (JRS) - JRS was established on August 27, 1937, and provides a defined set of benefits. Membership includes justices of the California Supreme Court or the District Court of Appeal and judges of a superior or municipal court appointed or elected before November 9, 1994.

- The Judges' Retirement System II (JRSII) – JRSII was established in 1994 and provides a defined set of benefits. Membership includes justices of the Supreme Court or the District Court of Appeal and judges of a superior or municipal court appointed or elected after November 9, 1994.

- The Legislators' Retirement System (LRS) - LRS has been administered by CalPERS since 1947 and provides a defined set of benefits. Members of the Assembly or Senate serving prior to November 7, 1990 (Reform Act of 1990), Constitutional Officers, Insurance Commissioner, and Legislative Statutory Officers are eligible for this program. This program is losing membership as participants step down from their elected positions and voluntarily leave the program.

- Health – The Health program covers State employees by law. Local public agencies and school employers can contract to have CalPERS provide these benefits to their employees, whether or not they contract for a retirement program.

- Supplemental Savings Program (SSP) – SSP provides participants additional retirement savings plans to complement the existing CalPERS defined benefit retirement plan and Social Security. This includes plans that invest pre-tax contributions, after-tax contributions and, in the case of State Peace Officers and Firefighters, employer-only contributions.

Illustration III.1 provides a high-level overview of the relationship between these programs, the four core business components, and the primary systems currently used to support each. The systems are described in this section under Section III.D – Current Technical Environment.
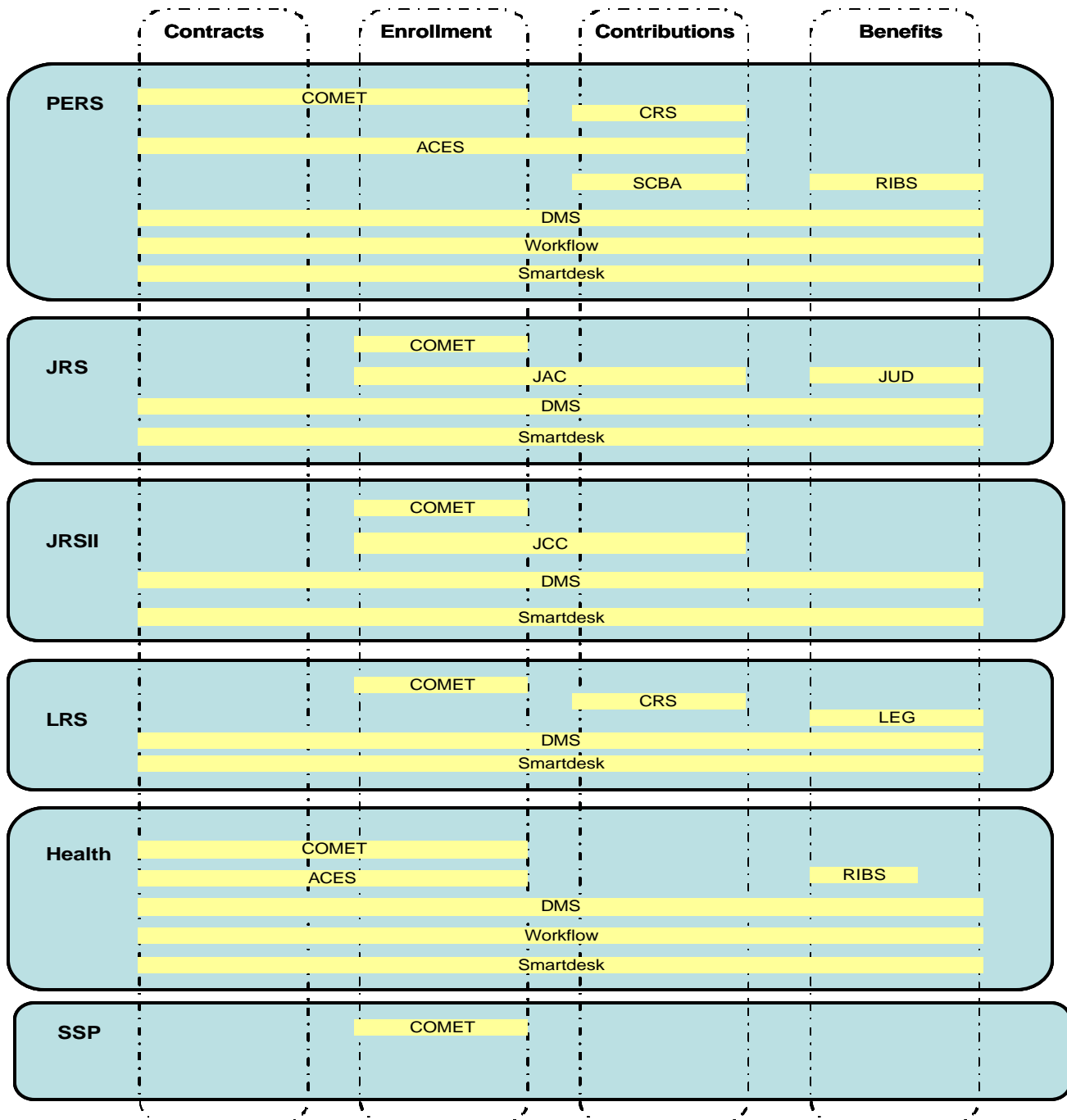
	Contracts	Enrollment	Contributions	Benefits
PERS	COMET	COMET	CRS	
	ACES	ACES	ACES	
			SCBA	RIBS
	DMS	DMS	DMS	DMS
	Workflow	Workflow	Workflow	Workflow
	Smartdesk	Smartdesk	Smartdesk	Smartdesk
JRS		COMET		
		JAC	JAC	JUD
	DMS	DMS	DMS	DMS
	Smartdesk	Smartdesk	Smartdesk	Smartdesk
JRSII		COMET		
		JCC	JCC	
	DMS	DMS	DMS	DMS
	Smartdesk	Smartdesk	Smartdesk	Smartdesk
LRS		COMET	CRS	
				LEG
	DMS	DMS	DMS	DMS
	Smartdesk	Smartdesk	Smartdesk	Smartdesk
Health	COMET	COMET		
	ACES	ACES		RIBS
	DMS	DMS	DMS	DMS
	Workflow	Workflow	Workflow	Workflow
	Smartdesk	Smartdesk	Smartdesk	Smartdesk
SSP		COMET		

Illustration III.1 – CalPERS Program/Business Component/System Matrix

Addenda No. 1 through 9

The table below summarizes key business volumes, by program.

Program	Active/Inactive Participants	Retirees, Survivors, Beneficiaries	Benefit Payments (FY 2003-2004)
PERS	1,014,360	413,272	$7,650,000,000
JRS	962	1,600	$121,436,460
JRS II	689	8	$547,000
LRS	49	268	$7,110,530

Program	State/PA Active Participants & Dependents	Retirees & Dependents	Premium Payments (FY 2003-2004)
Health	898,152	290,564	$590,136,440

Program	Active Participants		Assets (May 2005)
SSP	55,127		$684,000,000

Source: See the PSR Reference Library for supporting details, 'Facts at a Glance'.

Table III.1 Current Business Volumes as of March 31, 2005

2.   CalPERS Organization

The CalPERS organization is structured to deliver services to meet the needs of customers within the program areas listed above.   The Actuarial & Employer Service Branch (AESB) and the Member Benefits & Services Branch (MBSB) are the two customer-facing branches which operate to directly meet the needs of the Pension Benefits business line. The Health Benefits Branch is structured to meet the needs of the Health Benefits line of business. Although the Investment line of business is not included as part of this Request for Proposal (RFP) the Supplemental Savings Programs, which are housed within the Investment Office, are included within the scope of this RFP. The remainder of the organization, Human Resources, Fiscal Services, Information Technology, Strategic Business Development, Operations Support Services, Public Affairs, Governmental Affairs, and Legal Services play supporting roles in accomplishing the goals in each of these business lines. Overviews of the Actuarial & Employer Service Branch, the Member Benefits & Services Branch, and the Health Benefits Branch are provided along with an overview of the Information Technology Services Branch.   In addition, an overview of the key external entities that CalPERS exchanges information with is provided.

(a) **Actuarial & Employer Services Branch**

The Actuarial & Employer Services Branch (AESB) provides customer service to all State agencies, public agencies, and school employers, including actuarial services, public agency contracts, administering the Automated Communications Exchange System (ACES), reviewing compensation issues, maintaining and updating member records, analyzing membership qualification issues, and processing payroll data submitted by employers. The Branch also administers the State and Federal master agreement to provide Social Security for State, school, and public agency employers.

AESB includes the following business units which highlight a subset of key responsibilities:

- Account Maintenance Unit – Reviews, analyzes, and, if necessary, adjusts discrepant payroll records on the Contribution Reporting System (CRS) or contacts the Member Transactions Unit to correct the participant record on the Corporate Online Member Employer Transactions (COMET) database.

- ACES Unit – Oversees the administration of the Automated Communications Exchange System (ACES). ACES allows employers to submit health and retirement program benefit transactions electronically.

- Actuarial Special Projects Unit – Maintains and enhances the Actuarial Valuation System; provides support to Valuation Services in preparing actuarial valuations; responds to inquiries for information from both internal and external parties; and, provides actuarial support to the Member & Benefit Services Branch in the calculation of actuarial equivalent factors used in administering members' benefits.

- Communication Services Unit – Acts as a liaison for contracting public employers, schools, State agencies, and employee organizations through education, personal assistance, workshops, forums and surveys; and, provides new employer education for agencies newly contracting with CalPERS.

- Compensation Review Unit – Reviews payroll reported for members that fail the compensation parameters at the time of retirement to make sure everything reported meets the definition of reportable compensation.

- Contract Maintenance Unit – Provides ongoing contractual assistance to public agencies and school employers with primary emphasis on Retirement and Social Security Programs.

- <u>Employer Contact Center (ERCC)</u> – Provides a first tier of contact for receiving and responding to employer-related inquiries.

- <u>Membership Analysis & Design Unit</u> – Responsible for determining eligibility for membership in CalPERS, administrative remedies, appeals, and reviewing field audit findings.

- <u>Member Transaction Units</u> – Performs the vast majority of the day-to-day work in maintaining and updating the records of non-retired "active" and "inactive" members of CalPERS; and, provides technical support and receives referrals from the ERCC on membership-related matters.

- <u>Payroll Processing Unit</u> – Processes payroll reports submitted by State, schools, and contracting public agencies; collects, processes, and posts employer and member contributions; notifies and invoices agencies for delinquent payrolls; and, answers questions regarding penalties, waivers, and extensions.

- <u>Payroll Adjustment Unit</u> – Reviews, calculates, posts, and verifies service, contributions, and interest for payroll discrepancies, state peace officers and firefighters (SPOFF), post-retirement adjustments, "overtime" positions, local system transfers, negative statements, and social security discrepancies.

- <u>Public Agency Contracts & Employer Systems Unit</u> – Provides personal services to public agencies considering participation in the CalPERS Retirement Program; and maintains the employer data.

- <u>Valuation Services Section</u> – Performs the annual actuarial valuations for the State, schools, contracting public agencies, and for the LRS, JRS, JRS II, and Volunteer Fire Fighters (VFF).

- <u>Valuation Support Units</u> – Performs all tasks necessary to carry out the annual valuations for public agencies; reviews valuation output; assists actuaries in the annual valuations for State, schools, LRS, JRS, and VFF; and, maintains the actuarial database from both a structural and informational perspective.

The primary system enablers that AESB currently utilizes to perform its responsibilities include:

- ACES;

- COMET;

- CRS;

- DMS;

- Business Solutions Workflow;

- SmartDesk; and,

- AVS.

(b) **Member & Benefit Services Branch**

The Member & Benefit Services Branch (MBSB) provides customer service to all participants within its programs and supports the Actuarial & Employer Services Branch. MBSB services include responding to various customer inquiries and providing education services.

This branch consists of four primary business units: Members Services Division, Benefits Services Division, CalPERS Customer Contact Center, and Supplemental Savings Program Division.

(i) **Member Services Division**

The Member Services Division (MBSD) maintains information, including service credit for all active and inactive participants of CalPERS, determines eligibility for reciprocity with other retirement systems, and provides information to participants on their record status. MBSD provides cost information and service credit processing for participants who elect to redeposit contributions or purchase additional service and makes adjustments/corrections to service credit and contribution levels as provided by law.

MBSD also provides informational and educational services to participants, and employee/retiree organizations on all CalPERS programs.

MBSB includes the following business units. Descriptions highlight a subset of key responsibilities:

- Service Management – Provides general analytical/research support; resolves service credit problems; reviews rollovers for service credit purchase/conversion; coordinates the automated service credit systems; develops service credit section procedures; reviews settlement agreement issues; requests legal opinions; and reviews affecting legislation.

- Service Credit Costing – Applies the California Public Employees' Retirement Law (PERL) policies and procedures when calculating the costs of service credit purchases for various calculation types and costing methods; maintains historical record of participants' requests for purchase information and no rights letters; determines eligibility for reciprocity; and reviews and processes CalPERS and

California State Teachers' Retirement System (CalSTRS) election and determination.

- <u>Service Credit Buyback Account (SCBA) Production and Cleanup</u> – Establishes and maintains service credit purchase and benefit equity accounts; calculates balances due on benefit equity account and service credit purchase accounts for active and retiring participants; establishes payment schedules for retired participants; processes participants' request for payment schedule changes; changes status of service credit purchase accounts to pre-tax per participants' request; processes service credit payments and posts service credit; verifies benefit equity cash elections; reviews and processes First Tier and Second Tier benefit elections; and calculates manual benefit equity packages.

- <u>Community Property</u> – Reviews and interprets all community property claims, wage assignments for spousal or child support, and Internal Revenue Service (IRS) and Franchise Tax Board (FTB) levies received; interprets court orders and advises the processing units in both Benefit Services and Member Services of the appropriate division of benefits; responds to subpoenas in dissolution of marriage actions; responds to all requests for contribution information requested for community property purposes; and processes community property split of records.

- <u>Retirement Estimates</u> – Applies the PERL policies and procedures when calculating service and disability retirement estimates for CalPERS participants. Utilizes all available databases to research participant and employer information to determine an accurate calculation to be submitted to internal and external customers; and responds to routine telephone calls, correspondence, and electronic mail inquires regarding estimated benefits, refunds, various option settlements available at retirement, retirement process, and mailing participant booklets upon request.

- <u>Office of Judges' and Legislators' Retirement Systems (JLVO)</u> – Administers the two Judges' Retirement programs and the Legislators' Retirement program including, but not limited to, duties of determining and processing membership eligibility, participant enrollments, contributions, service credit purchases, retirement estimates, retirement pension set up, retirement roll maintenance, refunds, community property claims, and death and health benefits.

- Member Education – Develops and updates presentation scripts and material for Financial Planning Seminars, Retirement Planning Workshops, and Custom Presentations including "Retire In Style" for CalPERS members and presentations for CalPERS participants working outside of California; and provides Financial Planning Seminars for CalPERS Retirees and custom presentations for Retiree Associations.

The primary system enablers that MBSD currently utilizes to perform its responsibilities include:

- COMET;

- CRS;

- DMS;

- Business Solutions Workflow;

- SmartDesk;

- Service Credit Buyback (SCBA);

- Benefit Equity System (BES);

- Judges' Estimate System (JES);

- Judges' Active Contribution System (JAC);

- Judges' Retirement System (JUD); and,

- Legislators' Retirement System (LRS).

(ii)   **Benefit Services Division**

The Benefit Services Division (BNSD) primarily provides services related to retirement and death benefits. BNSD also processes all services pertaining to a participants' election to take a refund of their contributions and earnings. Division staff process monthly retirement payments, adjustments to retirement benefits including sick leave, cost-of-living increases, Purchasing Power Protection Allowance (PPPA) payments, annual tax statements (Form 1099R), reinstatements from retirement, payments for benefits to survivors and beneficiaries of retired participants, and refunds elected by the participant.

BNSD includes the following business units. Descriptions highlight a subset of key responsibilities:

- Retirement Processing Units – Performs service, disability, partial service retirement, and non-member retirement application processing; retirement calculation and adjustment; analysis of CalPERS Board of Administration, legal, and administrative issues; health insurance vesting, cancellations, and reinstatements from retirement; tax processing for retired participants; and changes to roll and participant benefits/options; etc.

- Exceptional Process and Resolution Unit – Provides first level resolution of complex and exceptional retirement issues; performs employer audit resolutions; analyzes legal/administrative issues; processes court-ordered judgments and penalty interest; and processes replacement benefit plan.

- Community Property Disposition Processing Unit – Processes community property dispositions including wage assignments for support and tax levies. Processing involves the analyses of annual Cost of Living Allowance (COLA) increases, health and dental insurance, tax withholding and Purchasing Power Protection Allowance (PPPA) changes.

- Refunds Unit – Processes refunds and rollovers from permanently separated members and non-members. This includes processing of 1099R's, stop payments, adjustments due to late payroll reporting, etc.

- Pre-Retirement and Post-Retirement Death Benefits Units – Calculates and pays the lump sum and monthly benefits to beneficiaries and survivors; determines eligibility for benefits; processes adjustments, overpayments, and legislative changes.

- Warrant Support/Roll Processing – Performs all activities necessary to create and maintain the benefit roll including maintaining the roll calendar. This also includes balancing rolls, resolving warrant-related issues, preparing the claim schedule and executive reports, and processing deductions, direct-deposits, and direct authorizations.

- Disability Retirement Section – Processes and oversees the entire disability application process including non-industrial disability retirement and industrial disability retirement; coordinates independent medical examiner appointments;

responds to internal and external inquiries; educates employer groups; prepares administrative remedies; and processes subrogation, notices of suspense, etc.

The primary system enablers that BNSD currently utilizes to perform its responsibilities include:

- COMET;

- CRS;

- DMS;

- Business Solutions Workflow;

- Retirement Information and Benefits System (RIBS);

- Disability Retirement System;

- Death Case Management System;

- Community Property System (CPS); and,

- Complimentary Health Premium Program (CHPP).

(iii) CalPERS Customer Contact Center

The CalPERS Customer Contact Center (CCCC) is the first point of contact for CalPERS active and retired participants, providing customer assistance by telephone, e-mail, correspondence, education, and walk-in services. CCCC is comprised of the headquarters Contact Center and eight Regional Offices.

CCCC includes the following business units:

- Contact Center Operations – Responds to customer inquiries via telephone, e-mail, and correspondence;

- Quality Assurance Unit - Administers the Quality Assurance Program for the division. This unit provides call monitoring and coaching for the Contact Center phone agents; and,

- Regional Offices – Provides member education, counseling, and walk-in customer services.

The primary system enablers that CCCC currently utilizes to perform its responsibilities include:

- COMET;

- CRS;

- DMS; and,

- Business Solutions Workflow.

(c)   Health Benefits Branch

The Health Benefits Branch (HBB) oversees the CalPERS health benefits program which provides health coverage to more than one million members and their families enrolled in CalPERS health plans.   HBB is made up of three primary offices:

- Office of Health Policy and Plan Administration - Develops policy for the CalPERS health benefits program, researches and develops new products and alternative approaches to health care, contracts with Health Maintenance Organizations (HMOs) and other vendors, negotiates annual premiums, and monitors health-related legislation. This office also manages the CalPERS self-funded health plans, PERSCare, and PERS Choice.

- Office of Employer and Member Health Services - Provides eligibility and enrollment services to the members and employers that participate in the CalPERS health benefits program, including the State, public agencies, and schools. This area also helps participants resolve difficult issues with their health plans, handles appeals and requests for administrative hearings, processes dental enrollment for State retirees, and provides marketing and contracting for public agencies.

- Office of Decision and Program Support Services - Focuses on healthcare cost and utilization research, provides analytic support for annual health plan premium negotiation, and also coordinates participant information systems for the CalPERS health benefits program.

The primary system enablers that HBB currently utilizes to perform its responsibilities include:

- ACES;

- COMET;

- CRS;

- DMS;

- Business Solutions Workflow; and,

- RIBS.

(d)   Supplemental Savings Program Division

The Supplemental Savings Program Division (SSPD) manages a comprehensive program of additional retirement savings plans to complement the existing CalPERS defined benefit retirement plan and Social Security. SSPD also provides information and education to promote members' awareness of retirement income needs and how supplemental savings plans can assist participants in achieving financial security at retirement.

The Supplemental Savings Programs include plans that invest pre-tax contributions, after-tax contributions and, in the case of State Peace Officers and Firefighters, an employer-only contribution plan. The following three plans are offered:

- CalPERS 457 Deferred Compensation for local public agency and school participants. Currently a third party maintains and administers this plan;

- State Peace Officers and Firefighters (SPOFF) Defined Contribution (DC) Plan (Employer provided benefit) for Bargaining Unit 6 participants. Currently a third party maintains and administers this plan; and,

- Supplemental Contributions Program for State employees. Currently a third party maintains enrollment and contribution reporting for this plan. CalPERS provides benefit payment for this plan.

The SSP scope of this project is limited to Contracts and Enrollments for all three plans; routing of contribution information from employers to a third party for all three plans, and Benefit Payments for the Supplemental Contributions Program. The third-party administrator will continue to manage the investments and interest earned reporting.

The primary system enablers that SSP currently utilizes to perform its responsibilities include:

- COMET; and,

- Supplemental Contributions System (SCS).

(e)   Information Technology Services Branch

The Information Technology Services Branch (ITSB) is responsible for the information technology functions of CalPERS, including system analysis and design, programming, testing, implementation, and maintenance for major computer systems and databases.

ITSB operates the CalPERS Data Center which provides production information processing services to all areas of CalPERS, including Regional Offices. Services provided by the Data Center include batch processing, database inquiry, telecommunications, software support, data entry, disaster recovery planning, data processing contract administration, and procurement of all data processing equipment and services.

ITSB also assists each division of CalPERS in making effective utilization of personal computers, local area networks, and office automation facilities, including technical support and training. In addition, ITSB conducts research, evaluation, and development of new information technology products and facilities for use at CalPERS.

ITSB is organized into two divisions to support the CalPERS lines of business – Technology Services and Support Division (TSSD) and Innovation Services Division (ISD).

(i) **Technology Services and Support Division**

TSSD is responsible for providing a wide variety of information technology development and support services including application and web development and support, data center and application infrastructure support services. The Division is comprised of the following:

- Application Development and Support Section – Responsible for development and maintenance of automated applications in support of CalPERS functional business units.

- Web Development and Support Section – Responsible for the design, development, implementation, and maintenance of web-based applications to meet the needs of the enterprise as well as external customers.

- Data Center Section – Responsible for the design, implementation, operations, and maintenance of the infrastructure that supports CalPERS business applications and desktop systems. Specific responsibilities include mainframe, enterprise and desktop systems support, storage support, voice and data network management, data entry, production scheduling, backup and recovery management, computer operations, and disaster recovery management.

- Application Infrastructure Support Section – Provides the infrastructure necessary for building and running enterprise applications, including databases, application servers, application architecture, imaging services, and workflow. In

addition, the section provides the program areas with a centralized point of contact for problem resolution.

(ii) **Innovation Services Division (ISD)**

ISD provides a wide range of information technology services including project management, implementation services, data administration, and testing as well as analyses of supporting business processes and architecture. ISD is comprised of the following sections:

- Enterprise Project Management Services – Establishes and enforces project management standards and processes for CalPERS; provides management of enterprise-level projects, assistance in project startups throughout the organization, and management and presentation of the CalPERS Project Portfolio.

- Implementation and Security Services Section – Focuses on the integrity and protection of the CalPERS computer systems' production environment as changes are deployed to meet the new and ongoing business objectives of the enterprise. In addition, this section provides security assurance services, release and implementation management services, and configuration management services.

- The Enterprise Testing Office – Responsible for system, regression, interface, and customer acceptance testing activities of CalPERS automated systems. These systems/projects may be associated with the development of new automated systems or modifications and enhancements to existing systems.

- Innovative Technology Services – Responsible for evaluating emerging technologies in support of CalPERS core business strategies.

- Business Engineering Services – Responsible for designing and implementing business processes and organizational models.

- Data Administration Services – Provides services to ensure data integrity and quality for CalPERS enterprise data. Services include data conversions, corrections, and synchronization; data model reviews; and enforcement of data standards.

- Enterprise Architecture Services – Responsible for providing an enterprise architecture framework of principles, recommended practices, guidelines, policies, methodologies, standards, tools, and models, which direct the design, analysis, construction, deployment, and management of information technology and systems across the enterprise.

(f)   External Entities

CalPERS exchanges information with numerous external government agencies and business partners to fulfill its business responsibilities. These external entities include, but are not limited to, the following:

- Employers – These are any organization that contracts with CalPERS to provide benefits for its employees. Employers submit employee wage and contribution information and payments to CalPERS in intervals that typically match normal payroll processing.

- California State Controller's Office (SCO) – CalPERS submits benefit and refund payment roll files to the SCO. SCO then applies the roll file in generating and mailing benefit payment warrants to CalPERS participants, and disbursing funds from the Public Employees' Retirement Fund (PERF).

- Employment Development Department (EDD) – EDD handles Non-Industrial Disability Insurance (NDI). Participants that are eligible for NDI benefits are not eligible to retire for disability until their NDI benefits run out.

- Franchise Tax Board (FTB) – Participant state tax is withheld from benefit payments and refunds and reported to the FTB for income tax purposes.

- Internal Revenue Service (IRS) – CalPERS reports all employee and employer yearly contributions to the IRS for tax purposes.

- California State Teachers' Retirement System (CalSTRS) – Employees of schools or county superintendents participate in CalSTRS and/or CalPERS. If the employee becomes certificated and is participating in CalPERS, the employee has the right to elect to continue to participate in CalPERS or CalSTRS.

- Health Carriers – These are organizations that contract with CalPERS to provide health benefits to enrolled CalPERS participants and dependents. These include Kaiser, Blue Cross of California, Blue Shield of California, and Western Health Advantage.

D. CURRENT TECHNICAL ENVIRONMENT

To support the Pension Benefits and Health Benefits lines of business, CalPERS maintains a variety of applications and databases that have been developed in a number of languages and on a mixture of platforms. The following technical environment descriptions provide an "as is" context for referencing the origin of requirements and potential reuse of strategic infrastructure components. An inventory of existing applications, databases, hardware, software, and interfaces are available to the QBP in the PSR Reference Library.

1. Systems Description

There are three core legacy systems supporting both the Pension and Health lines of business - Enrollment, Contribution Reporting, and Benefit Payments. Each system operates in a batch oriented environment on an IBM mainframe. The primary languages for the legacy enrollment and contribution reporting systems are Common Business Oriented Language (COBOL) using Virtual Storage Access Method (VSAM) file structures. The Benefit Payments System primary languages are COBOL and Software AG Natural, while the file structure is Adabas. After enrollment data is entered into the Corporate Database (CDB), appropriate information is forwarded to the legacy systems for processing. The Enrollment System contains approximately 14,000,000 records, the Contribution Reporting System approximately 5,000,000 records, and the Benefit Payment System approximately 89,000,000 records. The systems are described below:

- CalPERS Online Member and Employer Transaction (COMET) Systems - COMET is the system of record for many of the details related to CalPERS Pension business line. It contains employer, contract, rate, participant, and record information. In addition, the COMET system is used to maintain enrollment of participants in various Health programs along with the information needed to validate participation in these program. COMET produces reports for carriers, members, and employers, creates files for in-house divisions, sends data to other in-house and SCO systems, and provides error reports for the HBB.

- Contribution Reporting System (CRS) – CRS maintains records of service credit for all members as well as financial records of all member and employer retirement contributions. Implemented in 1976, it is the oldest of CalPERS retirement systems. It consists of both batch and online functions. Due to its complexity, CRS is divided into 15 subsystems as follows: Adjustments, Audits, Annual CRS Closing, Home Loan, Inquiry, IRS, Annual Member Statements, Public Agency Military, Online Transcripts, Payroll Delinquency, Payroll, Redeposit, Refunds, Verification of Deposit, and CRS Refresh. Various reports are provided to CalPERS program areas. CRS interfaces internally with the Employer Reserve System, CDB Participant Application, Retirement Information Benefit System, Benefit Equity System, and externally with the SCO and Public Agencies.

- Retirement Information and Benefits System (RIBS) - This system includes retirement estimates, retirement applications, death notifications, retirement and death benefit calculations, benefit payments, deduction collection (tax, health, dental, receivables, etc.), annual COLA increases, and more for State and contracted public employees. Major systems whose databases are accessed directly or access the RIBS database and online screens directly include Member, Employer, Contribution Reporting, Benefit Equity, Service Credit Buyback, SmartDesk applications, and Formal Retirement Estimate and Address Update.

  In addition, there are batch interfaces with the CDB Applications (Refresh, Transaction Log (T-Log), and Health Benefits), Actuarial Valuation, Benefit Revolving Fund, the SCO, Employer Reserves, IRS, EDD (for FTB) and various employers, health carriers, and organizations receiving deductions.

  The system is primarily written in the Natural programming language and uses an Adabas database, however, some of the older parts of the system are written in COBOL.

  The system currently provides benefit payments to approximately 413,000 monthly payees and an average of 1385 lump sum death payees each month. In addition, an average of 1850 new retirees and 400 new beneficiary payees are added to the roll each month.

- Service Credit Buyback Account (SCBA) – This system maintains and monitors service credit buyback accounts, payment schedules, distributions, and payment applications for members purchasing service credits in state, contracted public agencies, and school districts. Examples of service credit accounts are: redeposit of withdrawn contributions, military service credit, leave of absence, first tier arrears, maternity/paternity leave, and others.

- Judges' Active Contributions System (JAC) – This system is for active judges appointed or elected prior to November 9, 1994. This system tracks enrollment and contribution for the judges and received data from the SCO and 58 counties.

- Judges' Retirement System (JUD) – This system is utilized to pay retirement benefits, collect deduction, and support tax reporting for retired judges appointed or elected prior to November 9, 1994. This system was closed to newly elected judges in 1994. There are approximately 1600 participants being paid by this system.

- Judges' Retirement System (JCC) – This system is for judges appointed or elected after November 8, 1994. The system currently includes only the information gathered for working judges. A new subsystem to pay the benefits has not yet been developed, but has been requested. Only a handful of death cases (under 30) are being paid benefits from this system

via a manual roll but that is expected to increase rapidly once these judges become eligible to retire.

- Legislators' Retirement System (LRS) - This system is the payment system for retired legislators. Service and contribution information for these members is maintained in the CRS database with all other state and public employees. Warrant and Electronic Funds Transfer tapes are sent to SCO for processing payments. Deductions are taken for health, dental, taxes (state and federal), credit union, life insurance, and long-term care. The system has been closed since term limits were enacted. There are only 268 participants still being paid by the system.

- Automated Communications Exchange System (ACES) - The ACES Internet portal provides a secure method for employers to transmit data via the Internet. These types include maintaining health benefit enrollments, member registration, and payroll reporting. ACES is a beginning step toward increased use of the Internet, e-mail, and secure file-based transfers by our customers, along with an inquiry capability. The objective is to expand our communication channels. ACES offers two ways of submitting data to CalPERS: file transfer and Internet Forms. The file transfer function provides an electronic mechanism for transporting and moving large volumes of health, retirement, and payroll data from the employer's existing internal database to CalPERS. The Internet Forms function provides employers with an on-line Internet interface that allows employers to enter small volumes of Health (HBD-12) and Retirement (AESD-1) data electronically to CalPERS. Once this data is received at CalPERS, it is processed via an overnight batch process.

2. **Hardware**

The following is a listing of computing equipment. Please note that the hardware and software information provided may be shared by the entire CalPERS enterprise. For a complete listing of hardware details, refer to the Hardware Inventory found in the PSR Reference Library.

- IBM Mainframe - The IBM mainframe system currently in use is the model 2086-230. This is a two-processor system based on IBM S/390 31-bit architecture. The current operating system is z/OS version 1.5. The processor is the IBM z890 Model 230.

  The mainframe transaction processing software is the Customer Information Control System (CICS) Transaction Server version 2.2. This version provides support for a subset of the Java 2 Platform, Enterprise Edition (J2EE) (Java 2 Platform, Enterprise Edition) specifications. Within CalPERS, CICS supports approximately 300,000 transactions per day.

  The disk storage subsystem used on the mainframe is the IBM TotalStorage™ Enterprise Storage Server (ESS) Model F20. The ESS is

dedicated to the mainframe. The subsystems have an approximate storage capacity of 7.0TB.

The tape storage subsystem used on the mainframe is the IBM 3494 Virtual Tape Library. The subsystem is a combination of the 3494 Tape Library and the Virtual Tape System.

The mainframe connects to CalPERS Transmission Control Protocol / Internet Protocol (TCP/IP) network through IBM's Open Systems Adapter-Express (OSA) interface. OSA connects the mainframe to the Cisco routers and switches.

- Midrange Systems - The CalPERS Data Center uses Hewlett-Packard HP 9000 servers for midrange computing. There are 64 HP 9000 systems in use. These systems are a mix of L- and N-class servers and high-end Superdome enterprise-class servers. They are used as database servers and application servers.

  The HP 9000 servers run the HP-UX operating system. ITSB is running two versions of HP-UX, version 11.0 and 11i v1.

  The HP 9000 servers connect to HP SureStore disk subsystems, models XP512 and XP1024. These subsystems have a storage capacity of approximately 25TB. The XP disk subsystems are based on the Hitachi Data Systems storage engine with HP specific firmware, performance, and connectivity enhancements.

  The Data Center supports two versions, 3.x and 4.x, of the Red Hat Linux open-source operating system, which is used on 39 servers. These servers are used as front-end web servers and application servers connecting to back-end HP-UX database servers.

  The Data Center has implemented Tivoli Storage Manager (TSM) as the backup and recovery solution for the HP-UX, Linux, Intel server platforms, Microsoft (MS) Active Directory, and Microsoft Windows. The TSM software runs on two IBM p670/AIX servers, which are dedicated to the backup operation. These two servers are connected to an IBM 3494 (automated) Tape Library.

  The Data Center has implemented HP OpenView as the framework for enterprise system management. ITSB uses OpenView to monitor the Cisco network components, Oracle databases, the HP-UX, Linux, Netware, and Windows-based servers.

- Distributed System, Intel Platform - The Intel-based hardware platform is HP/Compaq ProLiant servers. ITSB supports 325 servers with approximately 10TB of direct attached disk space. These servers are used

as MS Active Directory file and print servers, Windows application servers, Exchange messaging servers, and Linux web servers.

ITSB has implemented server virtualization with VMware. VMware partitions one hardware server into several partitions, allowing each partition to act as a separate virtual server. VMware supports a number of the operating systems used by ITSB including Windows Server 2003, Windows 2000 Server, Netware 6, and Red Hat Linux 3.x and 4.x.

MS Active Directory is the network operating system used for file services and Windows 2000 for print services.

The next upgrade will be to Windows Server 2003 and is expected to begin in mid-2006. Windows servers are used as application servers, Microsoft SQL database servers, and Microsoft Exchange messaging servers.

Exchange Server 2000 is the messaging system currently in use. The Exchange 2000 infrastructure includes a Storage Area Network (SAN) that interconnects the Exchange servers with the existing HP SureStore XP disk subsystems.

Two products are used to provide directory services: MS Active Directory eDirectory and Microsoft's Active Directory Domain Services.

Remote access is accomplished with Checkpoint Virtual Private Network (VPN) solutions front-ending the Citrix Metaframe NFuse Secure Access Manager product. This enables secure, encrypted, and remote access to CalPERS applications.

Windows patch management is accomplished with Shavlik HFNetChkPro. This is a Windows-only patch management product. Patch management on the Netware servers is handled manually.

The Intel-based servers use Norton anti-virus software and the Exchange messaging servers are protected by TrendMicro ScanMail. In conjunction with the desktop anti-virus tool, McAfee, ITSB has three levels of anti-virus protection.

- Desktops - ITSB supports approximately 2,100 desktop Personal Computer (PC) workstations and 500 laptops. The Enterprise Desktop Customer Support group has standardized on the HP/Compaq hardware platform for desktop PC workstations.

The desktop and laptop computer desktop management is accomplished in the following manner:

Category	Product / Method
Lockdown	Active Directory Group Policies
Configuration Management	HP OpenView Radia
Software Distribution	HP OpenView Radia
Patch Management	HP OpenView Radia
Remote Control	Windows XP Remote Assistant

Table III.2 Desktop Management Software

3. Software

The CalPERS environment includes a vast array of software products, from desktop applications to commercial off-the-shelf (COTS) applications to custom applications developed for specific business units. For detailed information and an inventory of the software used at CalPERS, refer to the Software Inventory found in the PSR Reference Library. Following is a listing of the primary software utilized:

- Development Languages - There are three primary platforms of software development at CalPERS: 1) IBM mainframe; 2) HP midrange; and 3) Wintel (PC) desktop. It should be noted that some of the development efforts can and do span multiple platforms, for example, a web application could host presentations and could host business logic running on the midrange.

  The primary languages for applications within ITSB are:

  - COBOL;

  - Forté/Sun One Studio;

  - PowerBuilder;

  - Natural/Entire X;

  - Java; and,

  - RPG/CICS.

- Database Management Systems - Oracle, Adabas, and VSAM are the three primary databases used with CalPERS.

- Application Servers/Web Servers - CalPERS uses the Oracle Application Server and two different web servers (IIS/Apache) for web-based applications and sites. Internet Information Services (IIS) is the web server from Microsoft. IIS is used for the Corporate Governance web site as well as the CalPERS Insider. The Apache web server is used within CalPERS in conjunction with Oracle Application development and deployment.

- Message Brokers and Middleware - CalPERS uses the SeeBeyond product for middleware and message broker application development. The SeeBeyond product represents a set of tools designed to integrate existing Information Technology (IT) assets with new or existing applications. These integration tools combine a variety of different functionalities such as integrated communications, messaging, data transformation, data access, and workflow.

- System Monitoring - HP Open View is used by CalPERS for monitoring system performance and availability as well as network monitoring.

4. Network and Telecommunications

ITSB has standardized on Cisco System router and switches. The wide-area network interconnects eight (8) CalPERS Regional Office locations. These locations are linked with point-to-point T1 lines. Additional Asynchronous Transfer Mode and Frame Relay circuits are used to connect to two remote disaster recovery locations. These locations are dedicated to data center recovery and do not address business recovery.

Cisco PIX and Checkpoint Firewall-1 protect the network from unwanted intrusion via the Internet. These firewalls are paired and redundant. Network-based and host-based intrusion detection systems from Internet Security Systems protect the network and the server infrastructure.

Voice communications are managed through an EADS Telecom (previously Intecom) telephone switch. The EADS Centergy call center management system provides integrated voice response (IVR) capabilities and automated call distribution (ACD) routing capabilities.

Descriptions of the network are listed in Table III.3 below and shown in Illustration III.1. The system environment is provided in Illustration III.2.

NETWORK	
Information Transfer Protocol	TCP/IP
Software	Oracle 8.1.5, 8.1.6 and 8.1.7
	Oracle version servers 7,8, & 9
	HP VantagePoint OpenView
	HP OpenView Radia
	Faxination
Network Operating System	MS Active Directory
	(File Services)
	Microsoft Windows 2000 (Print Services)
	Microsoft Exchange (Communication)
Network Speed	Ethernet (100 Mbps to desktop –
	1000 Mbps on servers)
Network Services	Internet Access
	Mainframe Access
	Email
	File and Print Services
	Faxing
	Remote Access

Table III.3 Network Description

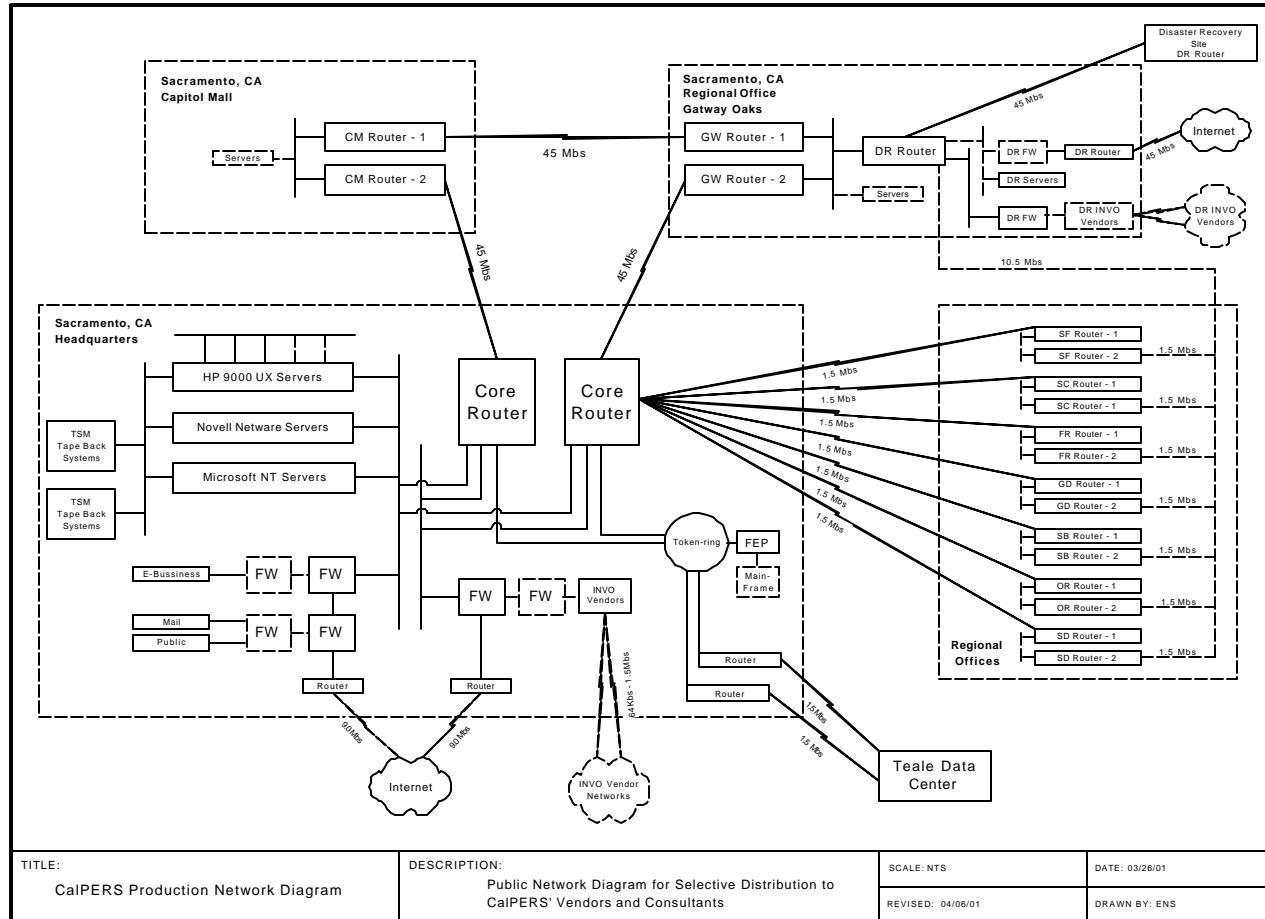The following diagram illustrates the network environment:

Illustration III.1 Current Network Architecture

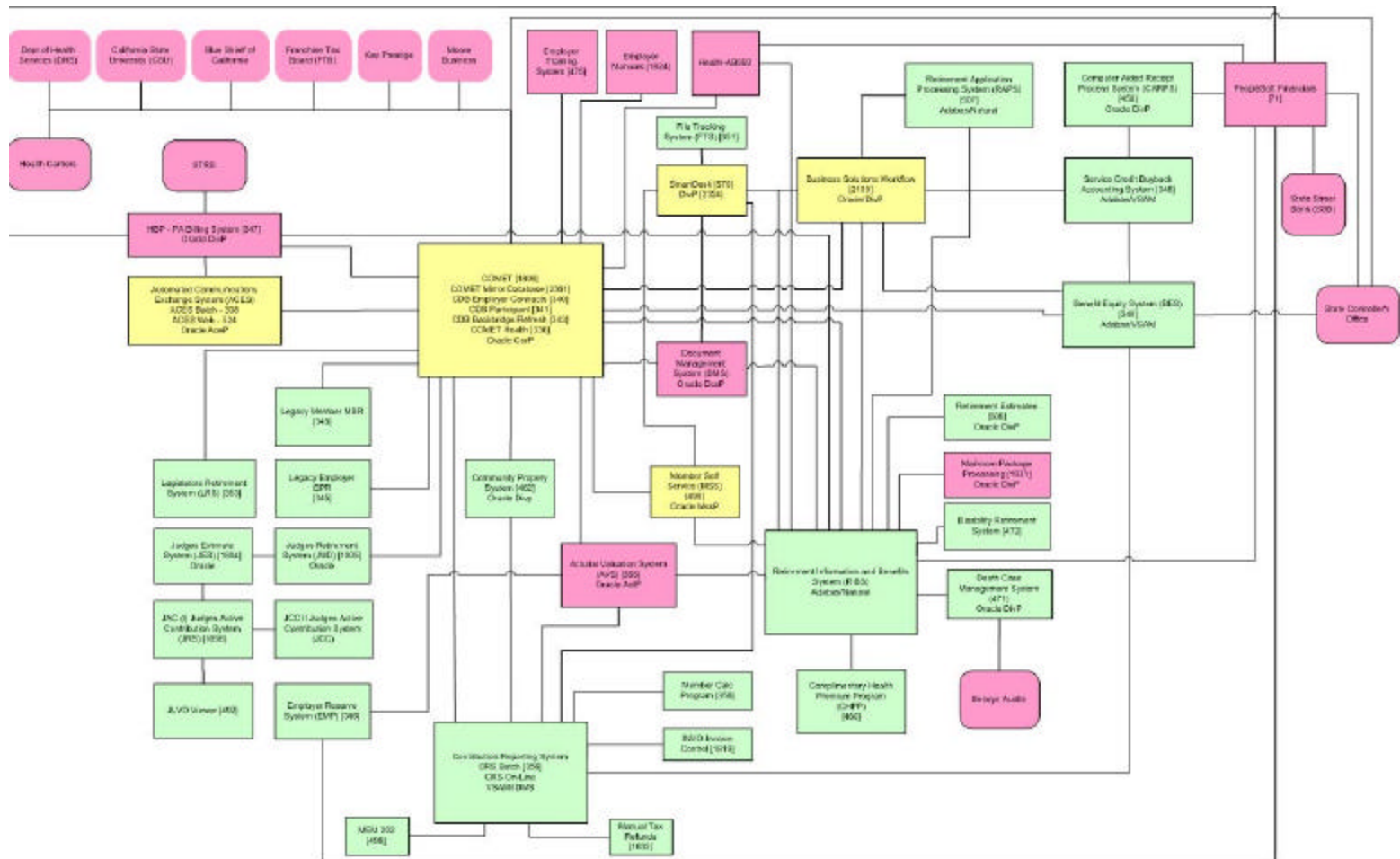The following diagram illustrates the system environment:

Illustration III.2, CalPERS System Environment

Legend
Green – Systems that must be replaced
Yellow – Optional systems to be replaced
Red –   Systems that will be interfaced to

5. **Security**

For obvious reasons security details will not be released for public consumption. Security-related information considered to be confidential will be made available to the QBP after award of contract.

CalPERS maintains a diverse data security environment that reflects its heterogeneous technical architecture. Requests for access to most CalPERS automated systems are managed though a semi-automated process that is comprised of electronic forms and e-mail communications between administrators. The Data Security Administration (DSA) group administers the request system.

Authorization on the mainframe is controlled by either Resource Access Control Facility (RACF) or Natural Security. Applications hosted on UNIX or Microsoft platforms use third-party security implementations or the underlying operating system for authorization. In some cases, security is enforced via customized code, which may operate in tandem with the host operating system.

Perimeter security is enforced through the use of firewalls, layered security zones, intrusion detection and monitoring software, and an aggressive anti-virus program. The internal network is monitored by software agents on a constant basis. Internet security relies primarily upon the perimeter infrastructure since the current Internet platforms are primarily content or worksheet oriented for use by the public and retirement system members. Business-to-business processing is protected through the use of third-party products or the underlying operating system.

6. **Data Center**

The ITSB Data Center houses CalPERS computing systems including the mainframe, web servers, application servers, database servers, disk storage subsystems, tape subsystems, and networking components. The equipment is located in two computer rooms within the Lincoln Plaza Headquarters building; one on the first floor and one on the second floor. The two computer rooms combine for an estimated 10,000 square feet of usable space.

The facility is cooled by chilled water systems and the computer systems are protected by Uninterruptible Power Supply (UPS) battery backup systems. Should power fail for an extended period of time, the equipment would be powered by the UPS batteries until the external generator starts and begins powering the load. Smoke detectors and gaseous fire suppression agents protect both computer rooms. A badge reader and mantrap control personnel access into the computer rooms.

7. **Transactions**

The following table indicates the type and number of transactions that currently occur within the CalPERS systems.

TYPE	VOLUME	PROJECTED GROWTH
Payroll Transactions	1.5 - 2.0 million/month	10%
Judges' Payroll Transactions	1500/month – JAC 350/month – JCC 58 counties reporting for each program	Flat
Payroll Submissions	3200 Employers/month	2%
Payroll Errors	250,000 Transactions/month	Flat
Service Credit Purchase Payroll Deductions	35,000/month	20%
Service Credit Purchase Cash Payments	1,200/month	20%
Employer Payments	3200/month	2%
Member Refunds	1200 - 2500/month (electronically) 30 – 40/month (manually)	5%
Member Account Transactions	25,000/month	Flat
Pension Audits	Employer Audits – 40 public agencies/year Compensation Review – 240 cases/month	Flat
Historical Records Access	30,000/month – online 7,000/month – paper transcripts	Flat

Table III. 4 Transaction and Data Volumes

8. Database Volumes

The following three tables present the product database attributes of the corporate database:

Instance/Database Name	Instance ID	Instance Server	Version	Size Gigs	PL/SQL Objects *	Nbr. Columns	Total Tables/ Views	Journal Tables
Actuarial (355 AVS)	actP	S2061	9.2.0.4 64-bit	114	526	4924	379	101
Annual Member Statement (AMS)	amsP	HP03	8.1.7.3 64-bit	3.7	0	64	3	0
Automated Communication Exchange (338 524 ACES)	aceP	HP03	8.1.7.3 64-bit	17.6	51	1383	91	0
COMET Mirror (for ACES 2361)	mcdP	HP03	8.1.7.3 64-bit	41.4	24	1376	87	0
Computer Telephony Configuration	ctcP	S2021	9.0.1.3 64-bit	0.9				
Corporate/COMET (1806)	corP	HP19	8.1.7.3 64-bit	70.5	1125	6359	479	263
Serena Dimensions – PVCS	dimP	S2021	8.1.7.3 64-bit	5.3				
Division Applications (SmartDesk)	divP	HP19	8.1.7.3 64-bit	18.7	725	5641	677	117
Document Management System (DMS)	dmsP	HP29	8.1.7.0.0 64-bit	35.3	3	5471	319	0
Document Management System (DMS)- Content Services(work flow)	dcsP	HP29	8.1.7.0.0 64-bit	3.1				
Enterprise Application Integration (SeeBeyond)	eaiP	S2041	9.2.0.4 64-bit	2				
Enterprise Architecture (ETA)	etaP	S2021	9.0.1.3 64-bit	0.2	180	553	77	4
Enterprise Desktop Manager (EDM)	edmP	S2021	9.0.1.3 64-bit	3.6				

Instance/Database Name	Instance ID	Instance Server	Version	Size Gigs	PL/SQL Objects *	Nbr. Columns	Total Tables/ Views	Journal Tables
Magic Total Service Desk	tsdP	HQS007	8.1.6.1.2	2.6				
Member Self Service	mssP	HP03	8.1.7.3 64-bit	0.8	88	1116	54	7
MiddleWare	midP	S2041	8.1.7.3 64-bit	0.8				
ModelMart	modP	S2021	9.0.1.3 64-bit	6.1				
Movaris Service Request	movP	S2021	8.1.7.3 64-bit	1.2				
OEM	oemP	HP09	9.0.1.2 64-bit	0.9				
Oracle Internet Directory (External)	iasdb id2P	HP26	9.0.2.2 64-bit	1.8				
Peoplesoft Financials	finP	S2001	9.0.1.3 64-bit	17.8				
Peoplesoft Human Resource Management	hrmP	S2001	8.1.7.2 64-bit	6.3				
Rational Developer	ratP	S2021	8.1.7.3 64-bit	2.1				
Resource Description Framework	rdfP	S2041	9.2.0.4 64-bit	0.4				
RoboInfo Pro	robP	S2021	9.2.0.3 64-bit	0.8				
TeamPlay Methodology Manager	tmmP	S2021	9.2.0.3 64-bit	1.3				
TeamPlay Project Manager	tpmP	S2021	9.2.0.3 64-bit	3.5				
Witness (Equality Balance) call monitoring	wbaP	S2021	8.1.7.3 64-bit	2.1				

Table III.5 ORACLE Production Database (PROD)

Application	Acronyms	Fields	Records	Size Mbytes	Natural Objects	Files/ Views
RIBS	BEN + TRK	1,847	60,360,072	13,526	5,802	113
Redeposit	CRD	59	1,714,549	184	186	3
Receivable	CRB/CRS	595	4,081,885	1,351	1,205	39
Transcripts	CTO	53	35,089	4	177	1
Benefit Equity	BES	253	1,067,599	250	484	12
Total		2,807	67,259,194	15,315	7,854	168

Table III.6 Adabas - 1

Application	Acronyms	Fields	Records	Size Mbytes	Natural Objects	Files/ Views
RIBS	BEN	55	22,566,745	12,009	2	1

Table III.7 Adabas - 2

9. Dependency Projects

CalPERS has a number of projects underway that may impact or interface with the PSR Project including, but not limited to:

a. Enterprise Management of Billings, Accounts Receivable, and Collections (EMBARC) Project

CalPERS current billing, accounts receivable, and collection processes are decentralized. There are a number of automated and manual billing, accounts receivable, and collection processes utilized throughout the enterprise. As such, there is data redundancy and inconsistency. The EMBARC Project will centralize and standardize these processes. Previously the pension system(s) performed these functions and housed some of this financial information but that will no longer be the case. Requirements have been written to drive an interface between the new pension system and CalPERS Financial System (PeopleSoft). This project is scheduled for completion in July 2006.

b. Legacy Backbridge Decommission

The Enterprise Backbridge Refresh (EBR) process replaces records on the Member, Employer, and Address legacy databases from extracts created from the CDB a.k.a. "database of record" (Unix).

The Decommission Project will eliminate the legacy enrollment database and associated backbridge process and, instead, provide direct access to the CDB. This Project is scheduled for completion in December 2005.

c.   CalPERS Customer Education Solution (CCES)

There are three components that make up the CCES solution:

- Customer Education Management System (CEMS) which functionally includes scheduling classes and appointments, enrolling participants, generating materials for classes, and providing various administrative functionality.

- Customer Online Education System (COES) is the portion of CCESS that is directly accessible by external member and employer enrollees. Functionality includes enrollment for instructor-led classes, registration for one-on-one appointments, and delivery of online class material.

- Education Content Library (ECL) is the shared content repository of CCES, housing all educational information for member and employer education. Content stored in ECL is accessible to CEMS maintainer through CEMS, and directly to CalPERS member and employer enrollees through COES.

d.   Forte Conversion Project

The original COMET applications were developed in Forte, a fourth generation language that will no longer be supported by Sun Corporation in September 2006. In December 2004, CalPERS initiated the Forté Conversion Project to migrate the affected applications to Java. It is anticipated that this Project is scheduled for completion in October 2006.